



Flood Risk
Management
Strategy 2022
Annex E
Strategic
Environmental
Assessment
Environmental
Report

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9 **FCERM** Flood and Coastal Erosion Risk Management

10 **FWMA** Flood and Water Management Act 2010

11 **LDNP** Lake District National Park

11 **LLFA** Lead Local Flood Authority

11 **LFRMS** Local Flood Risk Management Strategy

13 **SEA** Strategic Environmental Assessment

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Introduction

Background

Cumbria County Council, as a Lead Local Flood Authority (LLFA), is required under Section 9 of the Flood and Water Management Act 2010 to develop, maintain, apply and monitor a LFRMS. A SEA is required for the LFRMS to fulfil the requirements of the SEA Directive, which is transposed into English legislation by the Environmental Assessment of Plans and Programmes Regulations 2004 (the 'SEA Regulations').

The assessment of the LFRMS is described in terms of its likely significant effects on the environment. The purpose of an Environmental Report is also to describe mitigation measures for any adverse effects predicted; describe environmental enhancement measures; and include a monitoring framework.

The Study Area

The county of Cumbria consists of six districts (Allerdale, Barrow-in-Furness, Carlisle, Copeland, Eden and South Lakeland), and in 2020 had a population of 499,781. The county's population is largely rural and sparsely populated. It has the second lowest population density among English counties at 73.4 people per km² and has only five towns with a population of over 20,000 (Carlisle, Kendal, Workington, Whitehaven and Barrow-in-Furness).

Cumbria contains the Lake District National Park (LDNP), considered one of England's most outstanding areas of natural beauty. Much of Cumbria is mountainous, and it contains every peak in England over 3,000 feet (910m) above sea level, with Scafell Pike at 3,209 feet (978m) being the highest point of England. Cumbria's largest settlement and only city is Carlisle, in the north of the county and with a population of 108,400 in 2021. Barrow-in-Furness is the largest town in Cumbria and has a significantly smaller population of 67,648.

The Strategic Environmental Assessment

The European Directive 2001/42/ED (the 'SEA Directive') was adopted in 2001 and transposed into English legislation by the Environmental Assessment of Plans and Programmes Regulations in 2004. The purpose of the Directive is to increase the level of protection for the environment by integrating environmental considerations into the preparation and adoption of plans and programmes, with the view of promoting sustainable development.

The Directive requires a SEA to be carried out for all plans and programmes which are 'subject to preparation and/or adoption by an authority at national, regional or local level.' The LFRMS prepared for Cumbria is therefore one such document where an SEA is required.

The SEA seeks to identify and evaluate the likely environmental impacts that a plan, programme or policy may have prior to adoption and implementation. Identification of potential impacts in the early stages of the plan development allows time for alternative measures which may avoid adverse effects, to be identified and assessed.

The list below contains environmental receptors which are of particular interest to the SEA. They include ‘biodiversity, population, human health, fauna, flora, soil, water, air, climate, material assets, cultural heritage including architectural and archaeological heritage, landscape and the interrelationship of factors.’

- Population;
- Human Health;
- Biodiversity;
- Flora and Fauna;
- Soil;
- Water;
- Air;
- Climatic Factors;
- Material assets;
- Cultural heritage, including archaeological and built heritage;
- Landscape; and
- The interrelationship between these areas.

Undertaking an SEA is not a “one-off” action. The SEA legislation requires that certain actions are taken (e.g. early and on-going stakeholder engagement) and that certain outputs are produced (e.g. an environmental report). The SEA Directive sets out the procedure for carrying out the assessment, what information should be included and that it should take account of the following topic areas:

The assessment should consider the likely positive, negative, short, medium, long-term, temporary, permanent, cumulative and synergistic effects on these areas. These topic areas may also be referred to as “factors” or “receptors”.

Aim and structure of this Report

The Environmental Report documents the SEA process. The likely significant effects of implementing the actions put forward by the Cumbria LFRMS are identified, described and assessed in this document. The SEA Directive lists the content that is required in the Environmental Report. **Figure 1** lists the requirements, along with a signpost to the relevant sections of this report where the requirements are met.

Figure 1: Requirements of the SEA Directive

Requirement of the SEA Directive (Annex 1)	Section of Report
(a) An outline of the contents, main objectives of the plan or programme and relationship with other relevant plans and programmes.	Sections 3 and 5
(b) The relevant aspects of the current state of the environment and the likely evolution therefore without implementation of the plan or programme.	Section 5
(c) The environmental characteristics of areas likely to be significantly affected.	Section 5
(d) Any existing environmental problems which are relevant to the plan or programme including, in particular, those relating to any areas of particular environmental importance, such as designated pursuant to Directives 79/409/EEC and 92/43/EEC.	Section 5
(e) The environmental protection objectives, established at International, Community or Member State level, which are relevant to the plan or programme and the way those objectives and any environmental considerations have been taken into account during its preparation.	Sections 5 and 6
(f) The likely significant effects on the environment, including on issues such as biodiversity, population, human health, fauna, flora, soil, water, air, climatic factors, material assets, cultural heritage including architectural and archaeological heritage, landscape and the interrelationship of factors.	Sections 7 and 8
(g) The measures envisaged to prevent, reduce and as fully as possible offset any significant adverse effects on the environment of implementing the plan or programme.	Section 9
(h) An outline of the reasons for selecting the alternatives dealt with, and a description of how the assessment was undertaken including any difficulties (such as technical deficiencies or lack of know-how) encountered in compiling the required information.	Sections 8 and 9
(i) A description of the measures envisaged concerning monitoring in accordance with Article 10.	Section 9
(j) A non-technical summary of the information provided under the above headings.	Separate Document

Consultation

It is a requirement of the SEA Directive for the Environmental Report to be submitted formally for consultation. In England, there are three statutory Consultation Bodies. They are:

- Natural England
- English Heritage
- The Environment Agency

The SEA Regulations also require that stakeholders who, **‘in the authority’s opinion, are affected or likely to be affected by, or have an interest in the decisions involved in the assessment and adoption of the plan or programme concerned...’** are consulted with. This includes various departments within Cumbria County Council.

Consultation on the Scoping Report

As part of the original process to produce a SEA for the Cumbria LFRMS, published by Cumbria County Council in September 2022, a Scoping Report consultation was undertaken seeking the views on the scope and level of detail that should be included in the SEA.

Future Consultation

This Updated Environmental Report will be subject to a further consultation stage. It shall be published for public consultation alongside the draft Updated Cumbria Local Flood Risk Management Strategy and sent to the three statutory Consultation Bodies for comment.

Both the SEA and the LFRMS shall be out for consultation for a period of 4 weeks from 5 - 30 September 2022. All comments and recommendations received before the consultation deadline will be reviewed, considered and incorporated into the final SEA Environmental Report.

Local Flood Risk Management Strategies

Background to the LFRMS

It is a statutory requirement under Section 9 of the Flood and Water Management Act 2010 (FWMA) for a Lead Local Flood Authority (LLFA) to 'develop, maintain, apply and monitor a Strategy for local flood risk management in its area'. All lead local flood authorities in England must develop a LFRMS for flood and coastal erosion risk management. These must be consistent with the national flood and coastal erosion risk management (FCERM) strategy, taking account of the current policies and reflect the aspirations and priorities of partners with responsibilities for FCERM, as well as the wider local interests.

A further definition of ordinary watercourses is provided by The Act as 'a watercourse that does not form part of a main river' including but not limited to, all streams, ditches, culverts and ponds. Main rivers are those which are identified on a main rivers map, and like the sea and reservoirs, remain the responsibility of the Environment Agency, and are therefore not classed as a local risk.

Where there is an interaction between local flood risk and risks which are the responsibility of the Environment Agency, it may be necessary for the LLFA to consider all sources of flood risk (to some extent) in the LFRMS. An example of flood risk occurring due to the interaction of sources is 'tidal-locking', which is the result of the tide entering an ordinary watercourse, causing a backlog of water unable to discharge.

Since the county of Cumbria is at risk from all sources of flood risk mentioned above and has the issue of the interaction of flood risks, all forms of flood risk shall be considered in the Cumbria LFRMS. By including all sources of flood risk within the Strategy it provides a clear overview of flood risk within Cumbria and a co-ordinated approach to managing these risks.

Requirements of the LFRMS

Set out in the FWMA are the statutory requirements of the LFRMS. The LFRMS must specify:

- a) The risk management authorities in the authorities' areas,
- b) The flood and coastal erosion risk management functions that may be exercised by those authorities in relation to the area,
- c) The objectives for managing local flood risk, relevant to the local area and reflecting the level of risk,
- d) The measures proposed to achieve the set objectives,
- e) How and when the measures are expected to be implemented,
- f) The costs and benefits of the measures, and how they are to be paid for,
- g) The assessment of local flood risk for the purpose of the strategy,
- h) How and when the strategy is to be reviewed, and
- i) How the strategy contributes to the achievement of wider environmental objectives.

In addition to the above requirements, the LFRMS must also be consistent with the National Flood and Coastal Erosion Risk Management Strategy 2011.



Aim and Objective of the Cumbria LFRMS

The purpose of the Cumbria LFRMS is to help identify the extent and sources of flood risk facing the county and outline the approach to managing the risk.

The overarching aim of the strategy is to better the understanding, communication and management of flood risk in Cumbria through viable, sustainable and coordinated approaches for the benefit of people, property, land and the environment, both now and in the future.

The draft Cumbria LFRMS has five Policy Objectives, which are:

1. Reduction in flood risk to the people of Cumbria;
2. Increased knowledge and awareness of the factors affecting flood risk across Cumbria;
3. Ensure that flood risk management is integrated within the planning process in Cumbria;
4. Facilitate close partnership working between all risk management authorities;
5. Improve Community Resilience through awareness of flood risk.

Within the Strategy, Potential Vulnerable Areas (PVA) and Areas of Risks (AoR) within these PVAs have been developed. Each of these are designed to meet the above objectives. It is these measures, and alternatives, that shall be assessed later in this SEA to determine the possible impacts of the Strategy on various environmental receptors.

The SEA Process and Methodology

The SEA Directive

Article 1 of the SEA Directive describes the aim of the SEA. It states that the objectives is to 'provide for a high level of protection of the environment and to contribute to the integration of environmental considerations into the preparation and adoption of plans and programmes, with the view of promoting sustainable development'.

SEA Screening

Prior to the start of the SEA process, a screening stage is carried out. This is to determine whether the proposed plan or programme is subject to the SEA Directive and therefore requires a full SEA to be carried out.

Article 3(1) of the Directive states that an environmental assessment 'shall be carried out for plans or programmes which are likely to have significant environmental effects' and is followed by Article 3(2) which states 'for all plans and programmes which are prepared for water management'. Since the LFRMS is a plan carried out by Cumbria County Council, which is a local authority, for the management of water, and is likely to have significant effects on the environment, a SEA shall be required.

SEA Guidance

This SEA sets out the requirements of the SEA Directive and has been developed in accordance with the guidance set out in the 'Guidance: Strategic Environmental Assessment and Sustainability Appraisal (2015).'

Stages of the SEA

The SEA guidance identifies five sequential stages that should be completed to ensure the requirements of the Directive are met. Each stage and the tasks relating to it are summarised in **Figure 2**.

Figure 2: Stages and Tasks of the SEA

SEA Stage and Purpose	Tasks
<p>Stage A: Set the context and objectives, establish the baseline and decide on the scope.</p>	<p>A1: Identify other relevant plans, programmes and environmental protection objective. A2: Collect baseline information. A3: Identify environmental problems. A4: Develop SEA objectives. A5: Consult on the scope of the SEA.</p>
<p>Stage B: Develop and refine the alternatives and assess their effects.</p>	<p>B1: Test the plan or programme objectives against the SEA objectives. B2: Develop the strategic alternatives. B3: Predict the effects of the draft plan or programme, including alternatives. B4: Evaluate the effects of the draft plan or programme, including alternatives. B5: Consider ways of mitigating any adverse effects. B6: Propose measures to monitor the environmental effects of plan or programme implementation.</p>
<p>Stage C: Environmental Report.</p>	<p>C1: Prepare the Environmental Report.</p>
<p>Stage D: Consultation on the draft plan or programme and the Environmental Report.</p>	<p>D1: Consult on the draft plan or programme and the Environmental Report. D2: Assessment of significant changes. D3: Decision making and the provision of information.</p>
<p>Stage E: Monitor the significant effects of implementing the plan or programme.</p>	<p>E1: Development of aims and methods for monitoring. E2: Respond to adverse effects.</p>

The Scoping Stage and This Report

Stage A and the associated tasks represent the scoping stage of the SEA process. The draft Scoping Report was published for consultation prior to this report. Comments and recommendations from the scoping stage have been incorporated into this report. Stages B to E are completed within this report, which is the consultation version of the SEA Environmental Report which will be published alongside the LFRMS.

The SEA Approach

Introduction

This section of the report sets out the SEA objectives and the reason behind their development. Also within this section, the approach used for the assessment of the Strategy objectives, actions and alternatives is set and described.

The SEA Objectives

A total of seven SEA objectives have been developed as part of this project. The objectives have been developed through the review of relevant plans and programmes, and the collection of baseline data therefore they relate to the key environmental issues in Cumbria.

The objectives are used to evaluate the nature and degree of the potential impacts, and whether significant effects are likely to arise from the strategy's objectives and actions. **Figure 4** lists the SEA objectives and the key indicators of which they will be assessed by.



Figure 4: The SEA Objectives

Reference	SEA Objective:	Indicator:
SEA 1	Minimise the probability and consequences of flooding.	<ol style="list-style-type: none"> 1. Number of properties (residential, commercial, industrial, etc.) at significant risk of flooding 2. Number of properties granted planning permission in flood risk areas. 3. Number of potentially polluting features (e.g. sewage treatment works, landfill sites, contaminated land at significant risk of flooding 4. Number of flood risk management measures implemented 5. Number of Sustainable Drainage Systems developed
SEA 2	Minimise the probability and consequences of climate change.	<ol style="list-style-type: none"> 1. Number of properties (residential, commercial, Industrial, etc.) at significant risk of flooding 2. Number of potentially polluting features (e.g. sewage treatment works, landfill sites, contaminated land at significant risk of flooding. 3. Per capita greenhouse gas emissions.
SEA 3	Maintain, and where possible, enhance the quality of water resources, water bodies and their environment.	<ol style="list-style-type: none"> 1. WFD ecological status of rivers. 2. WFD chemical status of rivers.
SEA 4	Maintain, and where possible, enhance biodiversity, geo-diversity and soils.	<ol style="list-style-type: none"> 1. Area and condition of BAP habitat within the flood risk zone. 2. Population of key protected species. 3. Percentage of weirs which incorporate fish passes. 4. Non-native crayfish and other invasive species such as Japanese knotweed. 5. Number of flood risk schemes impacting on SSSIs.
SEA 5	Protect, and where possible, enhance the landscapes and green infrastructure.	<ol style="list-style-type: none"> 1. Extent of areas of special landscape character (e.g. Special Landscape Areas). 2. Extent of areas of Green Infrastructure.
SEA 6	Protect, and where possible, enhance the health and well-being of the population.	<ol style="list-style-type: none"> 1. Number of sewer flooding incidents. 2. Number of flood related injuries. 3. Number of residential properties at significant risk of flooding.
SEA 7	Protect existing and future economic and social infrastructure assets, services and amenities and encourage economic investment and growth.	<ol style="list-style-type: none"> 1. Number and severity of flood incidents leading to disruption or damage to service provision.

Social, Environmental and Economic Impacts of the SEA Objectives

It is acknowledged that the SEA objectives will have an impact on all social, environmental and economic factors. In order to highlight the areas where they are likely to have the most significant impact, the objectives have been tabulated in **Figure 5**.

Figure 5: Social, environmental and economic impacts of the SEA Objectives

SEA Objective	Social:	Environmental:	Economic:
1. Minimise the probability and consequences of flooding.	x	x	
2. Minimise the probability and consequences of climate change.	x	x	
3. Maintain, and where possible, enhance the quality of water resources, water bodies and their environment.		x	
4. Maintain, and where possible, enhance biodiversity, geo-diversity and soils.		x	
5. Protect, and where possible, enhance the landscapes and green infrastructure.		x	
6. Protect, and where possible, enhance the health and well-being of the population.	x	x	
7. Protect existing and future economic and social infrastructure assets, services and amenities and encourage economic investment and growth.	x	x	x

Figure 5 shows that a good spread of impacts can be achieved through the SEA objectives, however the objectives still have the environment at the heart.

Assessment Approach

For the purposes of this SEA, an objective based approach has been adopted. This approach uses the SEA Objectives to assess the LFRM Objectives, potential management options (actions) and alternatives in order to evaluate the Strategy's potential impacts on the wider environment.

To complete the assessment, a series of matrices will be used to evaluate each action to determine how the environment will be affected by the implementation of the strategy. The matrices will show the likely impacts of the actions and objectives of the Cumbria LFRMS.

The impacts shall be described in terms of their:

1. Nature: whether the effects are

- **Positive (+)**
- **Negative (-)**
- **Neutral (n)**
- **Uncertain (?)**

2. Duration: presented in terms of their anticipated timescale of effects

- **Short term (S)** – expected in the next 1 to 5 years (life of the strategy)
- **Medium term (M)** – expected in the next 6 to 10 years (beyond strategy life)
- **Long term (L)** – expected in the next 10+ years (beyond strategy life)

3. Permanence and Reversibility: whether the impacts are:

- **Permanent** – resulting from physical change that is predicted to last longer than 15 years.
- **Temporary** – resulting from operational change that can be restored, such as repairable damage caused during construction.
- **Reversible** – the effect can be reversed, and the environment restored.
- **Irreversible** – the effect cannot be reversed, such as the loss of a historic feature.

4. Spatial Scale: whether the impacts are likely to be:

- **Local** – effects are restricted to a specific site and remain within the Cumbria LFRMS boundary.
- **Regional** – effects are likely to cover a significant proportion of the areas surrounding the county.
- **National** – effects are likely to cover the whole of England and/or the UK.

To show the significance of the impacts resulting from the implementation of the LFRMS, a scoring criterion has been used, which is shown in **Figure 6**. It has been designed to take into account the criteria set out in Annex II of the SEA Directive and has been colour coded for clarity and ease of use in the assessment matrices. Where a score of 'neutral' has been awarded, this does not mean that there is no potential for any impacts to occur in the future, instead the assessment is based upon the current level of detail provided by the Strategy itself, and the score has been awarded in preference to 'uncertain' which implies further baseline data is required.

Figure 6: Impacts of Significance Scoring Criteria

Score:	Criteria:
++ Major Positive	Significantly beneficial to the SEA objective – Maximises opportunities for environmental enhancement or resolves existing environmental issue.
+ Minor Positive	Partially beneficial (not significant) to the SEA objectives – Contributes to resolving an existing environmental issue or offers some opportunities for enhancement.
N Neutral	Neutral effect on the SEA objective and environment.
? Uncertain	Insufficient detail on the option or baseline – Cannot effectively assess the significance of the option on the SEA objectives.
- Minor Negative	Partially undermines (not significantly) the SEA objective – Option would contribute to an environmental issue or reduce opportunities for enhancement.
-- Major Negative	Severely undermines the SEA objective – Will significantly contribute to an environmental problem or undermine opportunity for enhancement.



Appraisal of the Cumbria LFRMS Objectives

Introduction

A total of 5 overarching objectives have been put forward in the draft Cumbria LFRMS, each aiming to minimise and manage flood risk in the county.

The Cumbria LFRMS Objectives are:

1. Management of flood risk to the people of Cumbria.
2. Increased knowledge and awareness of the factors affecting flood risk across Cumbria.
3. Ensure that flood risk management is integrated within the planning process in Cumbria
4. Facilitate close partnership working between all risk management authorities
5. Improve Community Resilience through awareness of flood risk

Compatibility of the LFRMS Objectives with the SEA Objectives

In order to evaluate the impacts of implementing the LFRMS, the objectives have been assessed against the SEA objectives. The purpose of this assessment is to test the Strategy objectives against the SEA objectives to evaluate the likelihood and significance of any potential environmental impacts that may arise through Strategy implementation. The results of this assessment are shown in **Figure 7**, which has been completed using the criteria set out in **section 6** of this report. For simplicity, the table shows the SEA objectives as the main theme or environmental receptor represented.



Figure 7: Compatibility of the LFRMS Objectives and SEA Objectives

LFRMS Objectives	SEA Objectives						
	Minimise the probability and consequences of flooding	Minimise the probability and consequences of climate change	Maintain, and where possible, enhance the quality of water resources, water bodies and their environment	Maintain, and where possible, enhance biodiversity, geo-diversity and soils	Protect, and where possible, enhance the landscapes and green infrastructure	Protect, and where possible, enhance the health and well-being of the population	Protect existing and future economic and social infrastructure assets, services and amenities and encourage economic investment and growth
P1. Management of flood risk to the people of Cumbria.	++	++	+	+	+	+	+
P2. Increased knowledge and awareness of the factors affecting flood risk across Cumbria.	++	+	+	+	+	+	+
P3. Ensure that flood risk management is integrated within the planning process in Cumbria.	++	+	+	++	+	+	+
P4. Facilitate close partnership working between all risk management authorities.	++	+	+	+	+	+	+
P5. Improve Community Resilience through awareness of flood risk.	++	+	+	+	+	+	+

Assessment Summary

It is clear from the assessment of the LFRMS objectives against the SEA objectives (**Figure 7**) that it is unlikely that there will be any negative impacts on the environment, since a positive result was recorded against each objective.

Some of the LFRMS Policy Objectives are likely to have major positive impacts the SEA objectives, for example LFRMS Policy Objective 1, reduction in flood risk to the people of Cumbria, can provide major positive benefits to the reduction of flood risk, whilst aiding the adaptation to climate change. This is because better understanding of risk helps achieve appropriate and more advanced methods of management.

Increased knowledge and awareness of the factors affecting flood risk across Cumbria (LFRMS Policy Objective 2) is likely to have a major impact on the protection and enhancement of population and human health and quality of life. By actively getting the community involved in targeted actions to reduce flood risk, fear and worry of flooding can be reduced whilst understanding of the measures helps people to help protect their own property.

Duration of Impacts

In order to establish the duration of the likely impacts resulting from the implementation of the LFRMS, a second assessment has been made. **Figure 8** shows the likely duration of impacts of the Strategy as a whole, combining the effects of each of the seven objectives. The assessment looks in terms of whether the impacts are likely to arise in the short term through the 5 year life of the Strategy or medium term (5-10 years) or long term (10+ years), both of which are beyond the life of the Strategy.

Figure 8: Duration of the likely significant effects

SEA Objectives							
Duration:	Minimise the probability and consequences of flooding	Minimise the probability and consequences of climate change	Maintain, and where possible, enhance the quality of water resources, water bodies and their environment	Maintain, and where possible, enhance biodiversity, geo-diversity and soils	Protect, and where possible, enhance the landscapes and green infrastructure	Protect, and where possible, enhance the health and well-being of the population	Protect existing and future economic and social infrastructure assets, services and amenities and encourage economic investment and growth
Short Term (0 – 5 years)	++	+	+	+	+	+	+
Medium Term (5 – 10 years)	++	++	+	++	+	+	+
Long Term (10+ years)	++	++	+	++	+	+	+

Assessment Summary

The impacts of the implementation of the LFRMS are likely to occur in the short term, within the first 5 years, as well as continuing well beyond the life of the strategy. **Figure 8** shows that combined, the strategy Policy Objectives will contribute positive impacts to the SEA objectives, with some major positive outcomes.

The aim and purpose of the Cumbria LFRMS is to reduce and manage the risk of flooding to the county, therefore the objectives are likely to have a significant positive impact on SEA objective 1, the minimisation of flood risk, in the short, medium and long term.

Water and water quality has been assessed as having short, medium and long term major positive impacts, since the strategy aims to make use of Sustainable Urban Drainage Systems (SuDS) to minimise flood risk which immediately help to reduce the number of pollutants reaching watercourses. The use of SuDS then provides benefits to biodiversity (SEA objective 3), since there are many opportunities to create new habitats within the county through this method of management, which is also of benefit to wildlife.

Appraisal of the LFRMS implementation

Introduction

Set out in the Cumbria LFRMS are a series of actions which will be taken forward to meet the objectives and guiding principles for the management of flood risk Cumbria. The actions are divided into two types:

1. Potential Vulnerable Area (PVA)
2. Area of Risk (AoR)

For the assessment of the county-wide action, three alternative options have been developed and assessed to provide information on the relative performance of the option, helping to inform the decision making process. Only reasonable, realistic and relevant alternatives have been considered during this assessment since they have to be achievable. The purpose of this stage is to identify which of the options/actions will provide the most positive environmental outcomes, and therefore should be taken forward in the preferred list of actions.

The assessment of the actions has been carried out in the same way as the assessment of the objectives, using the same table showing the duration of the predicted impacts against each SEA objective, and the scoring criteria set out in section 6 of this report.

Assessment of the county-wide strategic option

One action has been identified within the Cumbria LFRMS which has a county-wide impact. It is this action that is intended to be implemented in order to meet the objectives of the Strategy, and ultimately contribute to the management of flood risk across Cumbria.

County-wide Action

Option:

- A. Do nothing – Leave risks of all potential sources of flooding from within the Strategy.
- B. All relevant Risk Management Authorities and Stakeholders from all assets that could present a risk of flooding.

Figure 9: Assessment of the risks of surface water flooding in Cumbria

Option	Duration	SEA Objectives						
		Minimise the probability and consequences of flooding	Minimise the probability and consequences of climate change	Maintain, and where possible, enhance the quality of water resources, water bodies and their environment	Maintain, and where possible, enhance biodiversity, geo-diversity and soils	Protect, and where possible, enhance the landscapes and green infrastructure	Protect, and where possible, enhance the health and well-being of the population	Protect existing and future economic and social infrastructure assets, services and amenities and encourage economic investment and growth
A	Short term	-	n	n	n	n	-	-
	Medium term	--	-	n	n	n	-	-
	Long term	--	-	n	n	n	-	-
B	Short term	++	+	n	n	n	+	+
	Medium term	++	++	n	n	n	+	+
	Long term	++	++	n	n	n	+	+

Option:

- A. Do nothing – Leave risks of all potential sources of flooding from within the Strategy.
- B. All relevant Risk Management Authorities and Stakeholders from all assets that could present a risk of flooding.

The assessment concludes that Option A would result in negative impacts in several areas. It is clear that doing nothing to incorporate the assessment of the risks of surface water flooding in Cumbria will not aid the minimisation of flood risk, improvement of water quality, protect existing and future economic and social infrastructure assets, services and amenities and encourage economic investment and growth or the adaption to the impacts of climate change.

Option B which asks all relevant stakeholders to review the surface water flooding maps and to create a list of the assets that are potentially at risk is designed to encourage stakeholders to think about the impacts of flooding, and how it can impact upon their assets. Through producing a list of assets that could potentially be affected; and how climate change could result in a greater likelihood of causing damage to these assets. This option can also inform developers and planners with regard to new developments as surface water flooding will become an ever-greater risk as a result of climate change.

Assessment of the Cumbria LFRMS actions

The LFRMS has identified 229 actions for areas at risk of surface water flooding that can be implemented at specific or localised sites. Impacts on the environment will be assessed for their likely significance and duration, but since localised actions will be site specific rather than applied to the whole of the county, no alternative measures are required for this assessment.

Figure 10: Assessment of Cumbria LFRMS actions screened in

LFRMS Action	Duration	SEA Objectives						
		Minimise the probability and consequences of flooding	Minimise the probability and consequences of climate change	Maintain, and where possible, enhance the quality of water resources, water bodies and their environment	Maintain, and where possible, enhance biodiversity, geo-diversity and soils	Protect, and where possible, enhance the landscapes and green infrastructure	Protect, and where possible, enhance the health and well-being of the population	Protect existing and future economic and social infrastructure assets, services and amenities and encourage economic investment and growth
AoR101 - Boreland Avenue	Short term	+	+	n	n	n	n	+
	Medium term	+	+	n	n	n	n	+
	Long term	+	+	n	n	n	n	+
AoR102 - Castle Carrock	Short term	+	+	n	n	n	n	+
	Medium term	+	+	n	n	n	n	+
	Long term	+	+	n	n	n	n	+
AoR103 - Thurstonfield	Short term	+	+	n	n	n	n	+
	Medium term	+	+	n	n	n	n	+
	Long term	+	+	n	n	n	n	+
AoR104 - Carlisle Centre	Short term	++	++	n	n	n	+	++
	Medium term	++	+	n	n	n	+	++
	Long term	+	+	n	n	n	+	++
AoR105 - Ivory Close	Short term	+	+	n	n	n	n	+
	Medium term	+	+	n	n	n	n	+
	Long term	+	+	n	n	n	n	+

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		Minimise the probability and consequences of flooding	Minimise the probability and consequences of climate change	Maintain, and where possible, enhance the quality of water resources, water bodies and their environment	Maintain, and where possible, enhance biodiversity, geo-diversity and soils	Protect, and where possible, enhance the landscapes and green infrastructure	Protect, and where possible, enhance the health and well-being of the population	Protect existing and future economic and social infrastructure assets, services and amenities and encourage economic investment and growth
AoR106 - Dalton Avenue	Short term	+	+	n	n	n	n	+
	Medium term	+	+	n	n	n	n	+
	Long term	+	+	n	n	n	n	+
AoR107 - Stanhope Road	Short term	+	+	n	n	n	n	+
	Medium term	+	+	n	n	n	n	+
	Long term	+	+	n	n	n	n	+
AoR108 - Dunmail Drive	Short term	+	+	n	n	n	n	+
	Medium term	+	+	n	n	n	n	+
	Long term	+	+	n	n	n	n	+
AoR109 - Skiddaw Road	Short term	+	+	n	n	n	n	+
	Medium term	+	+	n	n	n	n	+
	Long term	+	+	n	n	n	n	+
AoR110 - Durdar Road	Short term	+	+	n	n	n	n	+
	Medium term	+	+	n	n	n	n	+
	Long term	+	+	n	n	n	n	+

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AoR111 - Longholme Road	Short term	+	+	n	n	n	n	+
	Medium term	+	+	n	n	n	n	+
	Long term	+	+	n	n	n	n	+
AoR112 - Dacre Road	Short term	+	+	n	n	n	n	+
	Medium term	+	+	n	n	n	n	+
	Long term	+	+	n	n	n	n	+
AoR113 - Craw Park	Short term	+	+	n	n	n	n	+
	Medium term	+	+	n	n	n	n	+
	Long term	+	+	n	n	n	n	+
AoR114 - Brampton Centre	Short term	+	+	n	n	n	n	+
	Medium term	+	+	n	n	n	n	+
	Long term	+	+	n	n	n	n	+
AoR115 - Rockcliffe	Short term	+	+	n	n	n	n	+
	Medium term	+	+	n	n	n	n	+
	Long term	+	+	n	n	n	n	+

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AoR116 - Vallum Close	Short term	+	+	n	n	n	n	+
	Medium term	+	+	n	n	n	n	+
	Long term	+	+	n	n	n	n	+
AoR117 - Viaduct Estates Road	Short term	+	+	n	n	n	n	+
	Medium term	+	+	n	n	n	n	+
	Long term	+	+	n	n	n	n	+
AoR118 - Oaklands Drive	Short term	+	+	n	n	n	n	+
	Medium term	+	+	n	n	n	n	+
	Long term	+	+	n	n	n	n	+
AoR120 - Steele's Bank	Short term	+	+	n	n	n	n	+
	Medium term	+	+	n	n	n	n	+
	Long term	+	+	n	n	n	n	+
AoR122 - Moat Side	Short term	+	+	n	n	n	n	+
	Medium term	+	+	n	n	n	n	+
	Long term	+	+	n	n	n	n	+

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AoR123 - Silverdale Road	Short term	+	+	n	n	n	n	+
	Medium term	+	+	n	n	n	n	+
	Long term	+	+	n	n	n	n	+
AoR124 - Green Lane	Short term	+	+	n	n	n	n	+
	Medium term	+	+	n	n	n	n	+
	Long term	+	+	n	n	n	n	+
AoR125 - Chesterholm	Short term	+	+	n	n	n	n	+
	Medium term	+	+	n	n	n	n	+
	Long term	+	+	n	n	n	n	+
AoR126 - Queensway	Short term	+	+	n	n	n	n	+
	Medium term	+	+	n	n	n	n	+
	Long term	+	+	n	n	n	n	+
AoR127 - Newtown Road	Short term	+	+	n	n	n	n	+
	Medium term	+	+	n	n	n	n	+
	Long term	+	+	n	n	n	n	+

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AoR128 - Currock	Short term	+	+	n	n	n	n	+
	Medium term	+	+	n	n	n	n	+
	Long term	+	+	n	n	n	n	+
AoR129 - Mayfield Avenue	Short term	+	+	n	n	n	n	+
	Medium term	+	+	n	n	n	n	+
	Long term	+	+	n	n	n	n	+
AoR130 - Haig Road	Short term	+	+	n	n	n	n	+
	Medium term	+	+	n	n	n	n	+
	Long term	+	+	n	n	n	n	+
AoR131 - Brunton Crescent	Short term	+	+	n	n	n	n	+
	Medium term	+	+	n	n	n	n	+
	Long term	+	+	n	n	n	n	+
AoR132 - Gosling Drive	Short term	+	+	n	n	n	n	+
	Medium term	+	+	n	n	n	n	+
	Long term	+	+	n	n	n	n	+

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AoR133 - Edentown	Short term	+	+	n	n	n	n	+
	Medium term	+	+	n	n	n	n	+
	Long term	+	+	n	n	n	n	+
AoR134 - Kingstown Road	Short term	+	+	n	n	n	n	+
	Medium term	+	+	n	n	n	n	+
	Long term	+	+	n	n	n	n	+
AoR135 - Mount Pleasant Road	Short term	+	+	n	n	n	n	+
	Medium term	+	+	n	n	n	n	+
	Long term	+	+	n	n	n	n	+
AoR136 - Wigton Road	Short term	+	+	n	n	n	n	+
	Medium term	+	+	n	n	n	n	+
	Long term	+	+	n	n	n	n	+
AoR137 - Westrigg Road	Short term	+	+	n	n	n	n	+
	Medium term	+	+	n	n	n	n	+
	Long term	+	+	n	n	n	n	+

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AoR140 - Longtown	Short term	+	+	n	n	n	n	+
	Medium term	+	+	n	n	n	n	+
	Long term	+	+	n	n	n	n	+
AoR141 - Harraby	Short term	+	+	n	n	n	n	+
	Medium term	+	+	n	n	n	n	+
	Long term	+	+	n	n	n	n	+
AoR142 - The Green, Dalston	Short term	+	+	n	n	n	n	+
	Medium term	+	+	n	n	n	n	+
	Long term	+	+	n	n	n	n	+
AoR144 - Carlisle Appraisal Package	Short term	+	+	n	n	n	n	+
	Medium term	+	+	n	n	n	n	+
	Long term	+	+	n	n	n	n	+
AoR145 - Appraisal Package Low Crosby	Short term	+	+	n	n	n	n	+
	Medium term	+	+	n	n	n	n	+
	Long term	+	+	n	n	n	n	+

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AoR146 - Corby Weir Fish Pass Project	Short term	+	+	n	n	n	n	+
	Medium term	+	+	n	n	n	n	+
	Long term	+	+	n	n	n	n	+
AoR147 - Longtown Flood Storage Reservoir	Short term	+	+	n	n	n	n	+
	Medium term	+	+	n	n	n	n	+
	Long term	+	+	n	n	n	n	+
AoR148 - Warwick Bridge PFR scheme	Short term	+	+	n	n	n	n	+
	Medium term	+	+	n	n	n	n	+
	Long term	+	+	n	n	n	n	+
AoR149 - Stockdalewath, River Roe	Short term	+	+	n	n	n	n	+
	Medium term	+	+	n	n	n	n	+
	Long term	+	+	n	n	n	n	+
AoR150 - Warwick Bridge, Trout Beck Mill Leat	Short term	+	+	n	n	n	n	+
	Medium term	+	+	n	n	n	n	+
	Long term	+	+	n	n	n	n	+

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AoR201 - Threlkeld Village	Short term	+	+	n	n	n	n	+
	Medium term	+	+	n	n	n	n	+
	Long term	+	+	n	n	n	n	+
AoR202 - Pooley Bridge	Short term	+	+	n	n	n	n	+
	Medium term	+	+	n	n	n	n	+
	Long term	+	+	n	n	n	n	+
AoR203 - Gamblesby	Short term	+	+	n	n	n	n	+
	Medium term	+	+	n	n	n	n	+
	Long term	+	+	n	n	n	n	+
AoR204 - Glassonby	Short term	+	+	n	n	n	n	+
	Medium term	+	+	n	n	n	n	+
	Long term	+	+	n	n	n	n	+
AoR205 - Plumpton	Short term	+	+	n	n	n	n	+
	Medium term	+	+	n	n	n	n	+
	Long term	+	+	n	n	n	n	+

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AoR207 - Chapel Terrace AoR208 - Bruntley Meadows AoR209 - Overburn	Short term	+	+	n	n	n	n	+
	Medium term	+	+	n	n	n	n	+
	Long term	+	+	n	n	n	n	+
AoR210 - Station Road	Short term	+	+	n	n	n	n	+
	Medium term	+	+	n	n	n	n	+
	Long term	+	+	n	n	n	n	+
AoR211 - Nentsberry	Short term	+	+	n	n	n	n	+
	Medium term	+	+	n	n	n	n	+
	Long term	+	+	n	n	n	n	+
AoR213 - Greystoke	Short term	+	+	n	n	n	n	+
	Medium term	+	+	n	n	n	n	+
	Long term	+	+	n	n	n	n	+

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AoR214 - Shap	Short term	+	+	n	n	n	n	+
	Medium term	+	+	n	n	n	n	+
	Long term	+	+	n	n	n	n	+
AoR215 - Tebay	Short term	+	+	n	n	n	n	+
	Medium term	+	+	n	n	n	n	+
	Long term	+	+	n	n	n	n	+
AoR216 - South Road/ Birbeck Gardens	Short term	+	+	n	n	n	n	+
	Medium term	+	+	n	n	n	n	+
	Long term	+	+	n	n	n	n	+
AoR218 - High Street	Short term	+	+	n	n	n	n	+
	Medium term	+	+	n	n	n	n	+
	Long term	+	+	n	n	n	n	+
AoR220 - Station Yard	Short term	+	+	n	n	n	n	+
	Medium term	+	+	n	n	n	n	+
	Long term	+	+	n	n	n	n	+

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AoR222 - Pennine View Caravan Park	Short term	+	+	n	n	n	n	+
	Medium term	+	+	n	n	n	n	+
	Long term	+	+	n	n	n	n	+
AoR223 - Stainton Nr Penrith	Short term	+	+	n	n	n	n	+
	Medium term	+	+	n	n	n	n	+
	Long term	+	+	n	n	n	n	+
AoR224 - Renwick	Short term	+	+	n	n	n	n	+
	Medium term	+	+	n	n	n	n	+
	Long term	+	+	n	n	n	n	+
AoR225 - Penrith Town Centre	Short term	+	+	n	n	n	n	+
	Medium term	+	+	n	n	n	n	+
	Long term	+	+	n	n	n	n	+
AoR226 - Croglin	Short term	+	+	n	n	n	n	+
	Medium term	+	+	n	n	n	n	+
	Long term	+	+	n	n	n	n	+

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AoR227 - Cliburn Surface Water Scheme	Short term	+	+	n	n	n	n	+
	Medium term	+	+	n	n	n	n	+
	Long term	+	+	n	n	n	n	+
AoR228 - Temple Sowerby	Short term	+	+	n	n	n	n	+
	Medium term	+	+	n	n	n	n	+
	Long term	+	+	n	n	n	n	+
AoR229 - Appleby Pumping Station	Short term	+	+	n	n	n	n	+
	Medium term	+	+	n	n	n	n	+
	Long term	+	+	n	n	n	n	+
AoR231- Threlkeld	Short term	+	+	n	n	n	n	+
	Medium term	+	+	n	n	n	n	+
	Long term	+	+	n	n	n	n	+
AoR232 - Appleby Flood Gate Scheme	Short term	+	+	n	n	n	n	+
	Medium term	+	+	n	n	n	n	+
	Long term	+	+	n	n	n	n	+

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AoR233 - Eamont Bridge	Short term	+	+	n	n	n	n	+
	Medium term	+	+	n	n	n	n	+
	Long term	+	+	n	n	n	n	+
AoR234 - Lazonby, Harrow Beck	Short term	+	+	n	n	n	n	+
	Medium term	+	+	n	n	n	n	+
	Long term	+	+	n	n	n	n	+
AoR235 - Appleby Town Centre Appraisal	Short term	+	+	n	n	n	n	+
	Medium term	+	+	n	n	n	n	+
	Long term	+	+	n	n	n	n	+
AoR301 - Brundholme Gardens, Keswick	Short term	+	+	n	n	n	n	+
	Medium term	+	+	n	n	n	n	+
	Long term	+	+	n	n	n	n	+
AoR302 - Flimby	Short term	+	+	n	n	n	n	+
	Medium term	+	+	n	n	n	n	+
	Long term	+	+	n	n	n	n	+

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AoR304 - Beech Hill	Short term	+	+	n	n	n	n	+
	Medium term	+	+	n	n	n	n	+
	Long term	+	+	n	n	n	n	+
AoR306 - Main Road	Short term	+	+	n	n	n	n	+
	Medium term	+	+	n	n	n	n	+
	Long term	+	+	n	n	n	n	+
AoR307 - Ewanrigg	Short term	+	+	n	n	n	n	+
	Medium term	+	+	n	n	n	n	+
	Long term	+	+	n	n	n	n	+
AoR308 - Seaton	Short term	+	+	n	n	n	n	+
	Medium term	+	+	n	n	n	n	+
	Long term	+	+	n	n	n	n	+
AoR309 - Gill Beck	Short term	+	+	n	n	n	n	+
	Medium term	+	+	n	n	n	n	+
	Long term	+	+	n	n	n	n	+

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AoR314 - Workington Study	Short term	+	+	n	n	n	n	+
	Medium term	+	+	n	n	n	n	+
	Long term	+	+	n	n	n	n	+
AoR315 - St Kenigerns Close, Keswick	Short term	+	+	n	n	n	n	+
	Medium term	+	+	n	n	n	n	+
	Long term	+	+	n	n	n	n	+
AoR316 - Allerdale FRMS	Short term	+	+	n	n	n	n	+
	Medium term	+	+	n	n	n	n	+
	Long term	+	+	n	n	n	n	+
AoR317 - Braithwaite Flood Risk Management Scheme	Short term	+	+	n	n	n	n	+
	Medium term	+	+	n	n	n	n	+
	Long term	+	+	n	n	n	n	+

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AoR318 - Skinburness Embankment	Short term	+	+	n	n	n	n	+
	Medium term	+	+	n	n	n	n	+
	Long term	+	+	n	n	n	n	+
AoR320 - Harrington, River Wye FRM Scheme	Short term	+	+	n	n	n	n	+
	Medium term	+	+	n	n	n	n	+
	Long term	+	+	n	n	n	n	+
AoR321 - Wolsty Pumping Station Capital Maintenance	Short term	+	+	n	n	n	n	+
	Medium term	+	+	n	n	n	n	+
	Long term	+	+	n	n	n	n	+
AoR322 - Speet Gill, Wigton	Short term	+	+	n	n	n	n	+
	Medium term	+	+	n	n	n	n	+
	Long term	+	+	n	n	n	n	+

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AoR323 - Wiza Beck / Station Road, Wigton	Short term	+	+	n	n	n	n	+
	Medium term	+	+	n	n	n	n	+
	Long term	+	+	n	n	n	n	+
AoR324 - Millhouse	Short term	+	+	n	n	n	n	+
	Medium term	+	+	n	n	n	n	+
	Long term	+	+	n	n	n	n	+
AoR325 - Waver Wampool Drainage Investigation	Short term	+	+	n	n	n	n	+
	Medium term	+	+	n	n	n	n	+
	Long term	+	+	n	n	n	n	+
AoR401 - Norbeck Park, Cleator Moor	Short term	+	+	n	n	n	n	+
	Medium term	+	+	n	n	n	n	+
	Long term	+	+	n	n	n	n	+

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		Minimise the probability and consequences of flooding	Minimise the probability and consequences of climate change	Maintain, and where possible, enhance the quality of water resources, water bodies and their environment	Maintain, and where possible, enhance biodiversity, geo-diversity and soils	Protect, and where possible, enhance the landscapes and green infrastructure	Protect, and where possible, enhance the health and well-being of the population	Protect existing and future economic and social infrastructure assets, services and amenities and encourage economic investment and growth
AoR402 - Mill Street	Short term	+	+	n	n	n	n	+
	Medium term	+	+	n	n	n	n	+
	Long term	+	+	n	n	n	n	+
AoR403 - William Morris Avenue / Orchard Place	Short term	+	+	n	n	n	n	+
	Medium term	+	+	n	n	n	n	+
	Long term	+	+	n	n	n	n	+
AoR406 - Parkside	Short term	+	+	n	n	n	n	+
	Medium term	+	+	n	n	n	n	+
	Long term	+	+	n	n	n	n	+
AoR407 - Woodend	Short term	+	+	n	n	n	n	+
	Medium term	+	+	n	n	n	n	+
	Long term	+	+	n	n	n	n	+
AoR408 - Greenmoor Road	Short term	+	+	n	n	n	n	+
	Medium term	+	+	n	n	n	n	+
	Long term	+	+	n	n	n	n	+

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		Minimise the probability and consequences of flooding	Minimise the probability and consequences of climate change	Maintain, and where possible, enhance the quality of water resources, water bodies and their environment	Maintain, and where possible, enhance biodiversity, geo-diversity and soils	Protect, and where possible, enhance the landscapes and green infrastructure	Protect, and where possible, enhance the health and well-being of the population	Protect existing and future economic and social infrastructure assets, services and amenities and encourage economic investment and growth
AoR409 - Kirkland Road, Ennerdale Bridge	Short term	+	+	n	n	n	n	+
	Medium term	+	+	n	n	n	n	+
	Long term	+	+	n	n	n	n	+
AoR410 - Victoria Road	Short term	+	+	n	n	n	n	+
	Medium term	+	+	n	n	n	n	+
	Long term	+	+	n	n	n	n	+
AoR411 - Whitehaven North	Short term	+	+	n	n	n	n	+
	Medium term	+	+	n	n	n	n	+
	Long term	+	+	n	n	n	n	+
AoR412 - Hensingham	Short term	+	+	n	n	n	n	+
	Medium term	+	+	n	n	n	n	+
	Long term	+	+	n	n	n	n	+
AoR413 - Whitehaven centre	Short term	+	+	n	n	n	n	+
	Medium term	+	+	n	n	n	n	+
	Long term	+	+	n	n	n	n	+

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		Minimise the probability and consequences of flooding	Minimise the probability and consequences of climate change	Maintain, and where possible, enhance the quality of water resources, water bodies and their environment	Maintain, and where possible, enhance biodiversity, geo-diversity and soils	Protect, and where possible, enhance the landscapes and green infrastructure	Protect, and where possible, enhance the health and well-being of the population	Protect existing and future economic and social infrastructure assets, services and amenities and encourage economic investment and growth
AoR414 - Meadow Road	Short term	+	+	n	n	n	n	+
	Medium term	+	+	n	n	n	n	+
	Long term	+	+	n	n	n	n	+
AoR415 - Mirehouse West	Short term	+	+	n	n	n	n	+
	Medium term	+	+	n	n	n	n	+
	Long term	+	+	n	n	n	n	+
AoR416 - Sandwith	Short term	+	+	n	n	n	n	+
	Medium term	+	+	n	n	n	n	+
	Long term	+	+	n	n	n	n	+
AoR417 - Moresby Parks	Short term	+	+	n	n	n	n	+
	Medium term	+	+	n	n	n	n	+
	Long term	+	+	n	n	n	n	+
AoR418 - Rosebank	Short term	+	+	n	n	n	n	+
	Medium term	+	+	n	n	n	n	+
	Long term	+	+	n	n	n	n	+

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		Minimise the probability and consequences of flooding	Minimise the probability and consequences of climate change	Maintain, and where possible, enhance the quality of water resources, water bodies and their environment	Maintain, and where possible, enhance biodiversity, geo-diversity and soils	Protect, and where possible, enhance the landscapes and green infrastructure	Protect, and where possible, enhance the health and well-being of the population	Protect existing and future economic and social infrastructure assets, services and amenities and encourage economic investment and growth
AoR420 - Parton	Short term	+	+	n	n	n	n	+
	Medium term	+	+	n	n	n	n	+
	Long term	+	+	n	n	n	n	+
AoR421 - Mill Street	Short term	+	+	n	n	n	n	+
	Medium term	+	+	n	n	n	n	+
	Long term	+	+	n	n	n	n	+
AoR422 - Annaside	Short term	+	+	n	n	n	n	+
	Medium term	+	+	n	n	n	n	+
	Long term	+	+	n	n	n	n	+
AoR426 - Ravenglass	Short term	+	+	n	n	n	n	+
	Medium term	+	+	n	n	n	n	+
	Long term	+	+	n	n	n	n	+

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AoR427 - Holborn Hill AoR430 - Millom Centre AoR432 - Finch/Settle Street	Short term	+	+	n	n	n	n	+
	Medium term	+	+	n	n	n	n	+
	Long term	+	+	n	n	n	n	+
AoR428 - Mainsgate Road AoR431 - Wasdale/Oxford Street	Short term	+	+	n	n	n	n	+
	Medium term	+	+	n	n	n	n	+
	Long term	+	+	n	n	n	n	+
AoR429 - Moor Park	Short term	+	+	n	n	n	n	+
	Medium term	+	+	n	n	n	n	+
	Long term	+	+	n	n	n	n	+
AoR434 - Duke Street	Short term	+	+	n	n	n	n	+
	Medium term	+	+	n	n	n	n	+
	Long term	+	+	n	n	n	n	+

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AoR436 - River Annas, Bootle	Short term	+	+	n	n	n	n	+
	Medium term	+	+	n	n	n	n	+
	Long term	+	+	n	n	n	n	+
AoR437 - Snebra Beck	Short term	+	+	n	n	n	n	+
	Medium term	+	+	n	n	n	n	+
	Long term	+	+	n	n	n	n	+
AoR438 - Lakeland Ave, Wodhouse, Whitehaven	Short term	+	+	n	n	n	n	+
	Medium term	+	+	n	n	n	n	+
	Long term	+	+	n	n	n	n	+
AoR439 - Honister Rd, Whitehaven	Short term	+	+	n	n	n	n	+
	Medium term	+	+	n	n	n	n	+
	Long term	+	+	n	n	n	n	+
AoR440 - Coach Road, Whitehaven	Short term	+	+	n	n	n	n	+
	Medium term	+	+	n	n	n	n	+
	Long term	+	+	n	n	n	n	+

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AoR441 - Skirting Beck, Egremont	Short term	+	+	n	n	n	n	+
	Medium term	+	+	n	n	n	n	+
	Long term	+	+	n	n	n	n	+
AoR442 - Springfield Ave, Whitehaven	Short term	+	+	n	n	n	n	+
	Medium term	+	+	n	n	n	n	+
	Long term	+	+	n	n	n	n	+
AoR443 - Orgill Estate, Egremont	Short term	+	+	n	n	n	n	+
	Medium term	+	+	n	n	n	n	+
	Long term	+	+	n	n	n	n	+
AoR501 - Biggins Road, Kirkby Lonsdale	Short term	+	+	n	n	n	n	+
	Medium term	+	+	n	n	n	n	+
	Long term	+	+	n	n	n	n	+
AoR503 - Carus Green, Kendal	Short term	+	+	n	n	n	n	+
	Medium term	+	+	n	n	n	n	+
	Long term	+	+	n	n	n	n	+

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AoR504 - Greenbank Avenue, Ambleside Surface Water Flooding	Short term	+	+	n	n	n	n	+
	Medium term	+	+	n	n	n	n	+
	Long term	+	+	n	n	n	n	+
AoR505 - Guldrey Rd, Sedbergh	Short term	+	+	n	n	n	n	+
	Medium term	+	+	n	n	n	n	+
	Long term	+	+	n	n	n	n	+
AoR506 - Kennedy Street	Short term	+	+	n	n	n	n	+
	Medium term	+	+	n	n	n	n	+
	Long term	+	+	n	n	n	n	+
AoR507 - Kents Bank Road, Grange over Sands	Short term	+	+	n	n	n	n	+
	Medium term	+	+	n	n	n	n	+
	Long term	+	+	n	n	n	n	+

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AoR508 - Lowther Park, Kendal	Short term	+	+	n	n	n	n	+
	Medium term	+	+	n	n	n	n	+
	Long term	+	+	n	n	n	n	+
AoR509 - Main Street, Kirkby Lonsdale	Short term	+	+	n	n	n	n	+
	Medium term	+	+	n	n	n	n	+
	Long term	+	+	n	n	n	n	+
AoR510 - Middleshaw	Short term	+	+	n	n	n	n	+
	Medium term	+	+	n	n	n	n	+
	Long term	+	+	n	n	n	n	+
AoR511 - North Road	Short term	+	+	n	n	n	n	+
	Medium term	+	+	n	n	n	n	+
	Long term	+	+	n	n	n	n	+
AoR512 - Rinkfield, Kendal	Short term	+	+	n	n	n	n	+
	Medium term	+	+	n	n	n	n	+
	Long term	+	+	n	n	n	n	+

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AoR513 - Rydal, Grasmere	Short term	+	+	n	n	n	n	+
	Medium term	+	+	n	n	n	n	+
	Long term	+	+	n	n	n	n	+
AoR514 - The Tannery, Burton in Kendal	Short term	+	+	n	n	n	n	+
	Medium term	+	+	n	n	n	n	+
	Long term	+	+	n	n	n	n	+
AoR524 - Lake Road/ Thornbarrow Road	Short term	+	+	n	n	n	n	+
	Medium term	+	+	n	n	n	n	+
	Long term	+	+	n	n	n	n	+
AoR524 - Lake Road / Craig Walk	Short term	+	+	n	n	n	n	+
	Medium term	+	+	n	n	n	n	+
	Long term	+	+	n	n	n	n	+
AoR525 - Mountain Ash Court	Short term	+	+	n	n	n	n	+
	Medium term	+	+	n	n	n	n	+
	Long term	+	+	n	n	n	n	+

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AoR532 - St Martin's Parade AoR548 - Crag Brow	Short term	+	+	n	n	n	n	+
	Medium term	+	+	n	n	n	n	+
	Long term	+	+	n	n	n	n	+
AoR533 - South Terrace	Short term	+	+	n	n	n	n	+
	Medium term	+	+	n	n	n	n	+
	Long term	+	+	n	n	n	n	+
AoR537 - Blind Beck	Short term	+	+	n	n	n	n	+
	Medium term	+	+	n	n	n	n	+
	Long term	+	+	n	n	n	n	+
AoR539 - Romney Road	Short term	+	+	n	n	n	n	+
	Medium term	+	+	n	n	n	n	+
	Long term	+	+	n	n	n	n	+

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AoR540 - Collin Road	Short term	+	+	n	n	n	n	+
	Medium term	+	+	n	n	n	n	+
	Long term	+	+	n	n	n	n	+
AoR541 - Bellingham Road	Short term	+	+	n	n	n	n	+
	Medium term	+	+	n	n	n	n	+
	Long term	+	+	n	n	n	n	+
AoR542 - Hallgarth	Short term	+	+	n	n	n	n	+
	Medium term	+	+	n	n	n	n	+
	Long term	+	+	n	n	n	n	+
AoR543 - Sandylands	Short term	+	+	n	n	n	n	+
	Medium term	+	+	n	n	n	n	+
	Long term	+	+	n	n	n	n	+
AoR544 - Milnthorpe Road	Short term	+	+	n	n	n	n	+
	Medium term	+	+	n	n	n	n	+
	Long term	+	+	n	n	n	n	+

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AoR545 - Mayfield Avenue	Short term	+	+	n	n	n	n	+
	Medium term	+	+	n	n	n	n	+
	Long term	+	+	n	n	n	n	+
AoR546 - Burton in Kendal	Short term	+	+	n	n	n	n	+
	Medium term	+	+	n	n	n	n	+
	Long term	+	+	n	n	n	n	+
AoR547 - Beetham	Short term	+	+	n	n	n	n	+
	Medium term	+	+	n	n	n	n	+
	Long term	+	+	n	n	n	n	+
AoR548 - Crag Brow	Short term	+	+	n	n	n	n	+
	Medium term	+	+	n	n	n	n	+
	Long term	+	+	n	n	n	n	+
AoR550 - Patterdale Road	Short term	+	+	n	n	n	n	+
	Medium term	+	+	n	n	n	n	+
	Long term	+	+	n	n	n	n	+

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AoR551 - Yewbarrow Terrace, Grange over Sands	Short term	+	+	n	n	n	n	+
	Medium term	+	+	n	n	n	n	+
	Long term	+	+	n	n	n	n	+
AoR552 - Vicarage Drive, Kendal	Short term	+	+	n	n	n	n	+
	Medium term	+	+	n	n	n	n	+
	Long term	+	+	n	n	n	n	+
AoR553 - Queens Sq, Kirkby Lonsdale	Short term	+	+	n	n	n	n	+
	Medium term	+	+	n	n	n	n	+
	Long term	+	+	n	n	n	n	+
AoR554 - Low Garth, Kendal	Short term	+	+	n	n	n	n	+
	Medium term	+	+	n	n	n	n	+
	Long term	+	+	n	n	n	n	+

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AoR555 - Lindale Road, Grange over Sands	Short term	+	+	n	n	n	n	+
	Medium term	+	+	n	n	n	n	+
	Long term	+	+	n	n	n	n	+
AoR556 - Fairfield, Flookburgh	Short term	+	+	n	n	n	n	+
	Medium term	+	+	n	n	n	n	+
	Long term	+	+	n	n	n	n	+
AoR558 - Bellman Close, Wmere	Short term	+	+	n	n	n	n	+
	Medium term	+	+	n	n	n	n	+
	Long term	+	+	n	n	n	n	+
AoR560 - Beckside Road, Ulverston	Short term	+	+	n	n	n	n	+
	Medium term	+	+	n	n	n	n	+
	Long term	+	+	n	n	n	n	+
AoR561 - Humphrey Head Managed Realignment	Short term	+	+	n	n	n	n	+
	Medium term	+	+	n	n	n	n	+
	Long term	+	+	n	n	n	n	+

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AoR562 - Appraisal Package Backbarrow and Windermere FRM Scheme	Short term	+	+	n	n	n	n	+
	Medium term	+	+	n	n	n	n	+
	Long term	+	+	n	n	n	n	+
AoR563 - Kendal Appraisal Package Kendal FRM Scheme	Short term	+	+	n	n	n	n	+
	Medium term	+	+	n	n	n	n	+
	Long term	+	+	n	n	n	n	+
AoR564 - Lyth Valley Drainage investigations	Short term	+	+	n	n	n	n	+
	Medium term	+	+	n	n	n	n	+
	Long term	+	+	n	n	n	n	+

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AoR565 - South Ulverston Integrated FRMS	Short term	+	+	n	n	n	n	+
	Medium term	+	+	n	n	n	n	+
	Long term	+	+	n	n	n	n	+
AoR566 - Burneside (Steels Row, Bridge Street)	Short term	+	+	n	n	n	n	+
	Medium term	+	+	n	n	n	n	+
	Long term	+	+	n	n	n	n	+
AoR567 - Staveley	Short term	+	+	n	n	n	n	+
	Medium term	+	+	n	n	n	n	+
	Long term	+	+	n	n	n	n	+
AoR601 - Blackbutts Lane	Short term	+	+	n	n	n	n	+
	Medium term	+	+	n	n	n	n	+
	Long term	+	+	n	n	n	n	+

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AoR602 - Greystone Lane	Short term	+	+	n	n	n	n	+
	Medium term	+	+	n	n	n	n	+
	Long term	+	+	n	n	n	n	+
AoR604 - Silverdale Street	Short term	+	+	n	n	n	n	+
	Medium term	+	+	n	n	n	n	+
	Long term	+	+	n	n	n	n	+
AoR606 - Longway	Short term	+	+	n	n	n	n	+
	Medium term	+	+	n	n	n	n	+
	Long term	+	+	n	n	n	n	+
AoR607 - Harrel Lane	Short term	+	+	n	n	n	n	+
	Medium term	+	+	n	n	n	n	+
	Long term	+	+	n	n	n	n	+
AoR608 - Abbots Vale	Short term	+	+	n	n	n	n	+
	Medium term	+	+	n	n	n	n	+
	Long term	+	+	n	n	n	n	+

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		Minimise the probability and consequences of flooding	Minimise the probability and consequences of climate change	Maintain, and where possible, enhance the quality of water resources, water bodies and their environment	Maintain, and where possible, enhance biodiversity, geo-diversity and soils	Protect, and where possible, enhance the landscapes and green infrastructure	Protect, and where possible, enhance the health and well-being of the population	Protect existing and future economic and social infrastructure assets, services and amenities and encourage economic investment and growth
AoR609 - Flass Lane	Short term	+	+	n	n	n	n	+
	Medium term	+	+	n	n	n	n	+
	Long term	+	+	n	n	n	n	+
AoR610 - West Avenue	Short term	+	+	n	n	n	n	+
	Medium term	+	+	n	n	n	n	+
	Long term	+	+	n	n	n	n	+
AoR612 - Wheatclose Road	Short term	+	+	n	n	n	n	+
	Medium term	+	+	n	n	n	n	+
	Long term	+	+	n	n	n	n	+
AoR613 - Market Street	Short term	+	+	n	n	n	n	+
	Medium term	+	+	n	n	n	n	+
	Long term	+	+	n	n	n	n	+
AoR614 - King Street	Short term	+	+	n	n	n	n	+
	Medium term	+	+	n	n	n	n	+
	Long term	+	+	n	n	n	n	+

LFRMS Action	Duration	SEA Objectives						
		Minimise the probability and consequences of flooding	Minimise the probability and consequences of climate change	Maintain, and where possible, enhance the quality of water resources, water bodies and their environment	Maintain, and where possible, enhance biodiversity, geo-diversity and soils	Protect, and where possible, enhance the landscapes and green infrastructure	Protect, and where possible, enhance the health and well-being of the population	Protect existing and future economic and social infrastructure assets, services and amenities and encourage economic investment and growth
AoR616 - Newton Road, Dalton	Short term	+	+	n	n	n	n	+
	Medium term	+	+	n	n	n	n	+
	Long term	+	+	n	n	n	n	+
AoR617 - Amphitrite Street	Short term	+	+	n	n	n	n	+
	Medium term	+	+	n	n	n	n	+
	Long term	+	+	n	n	n	n	+
AoR619 - Hindpool Road	Short term	+	+	n	n	n	n	+
	Medium term	+	+	n	n	n	n	+
	Long term	+	+	n	n	n	n	+
AoR620 - North Road	Short term	+	+	n	n	n	n	+
	Medium term	+	+	n	n	n	n	+
	Long term	+	+	n	n	n	n	+
AoR622 - Holebeck Road	Short term	+	+	n	n	n	n	+
	Medium term	+	+	n	n	n	n	+
	Long term	+	+	n	n	n	n	+

LFRMS Action	Duration	SEA Objectives						
		Minimise the probability and consequences of flooding	Minimise the probability and consequences of climate change	Maintain, and where possible, enhance the quality of water resources, water bodies and their environment	Maintain, and where possible, enhance biodiversity, geo-diversity and soils	Protect, and where possible, enhance the landscapes and green infrastructure	Protect, and where possible, enhance the health and well-being of the population	Protect existing and future economic and social infrastructure assets, services and amenities and encourage economic investment and growth
AoR623 - Friars Lane	Short term	+	+	n	n	n	n	+
	Medium term	+	+	n	n	n	n	+
	Long term	+	+	n	n	n	n	+
AoR624 - Ewan Close, Barrow	Short term	+	+	n	n	n	n	+
	Medium term	+	+	n	n	n	n	+
	Long term	+	+	n	n	n	n	+
AoR625 - Walney South	Short term	+	+	n	n	n	n	+
	Medium term	+	+	n	n	n	n	+
	Long term	+	+	n	n	n	n	+
AoR626 - Goose Green	Short term	+	+	n	n	n	n	+
	Medium term	+	+	n	n	n	n	+
	Long term	+	+	n	n	n	n	+
AoR627 - Mill Beck, Barrow in Furness	Short term	+	+	n	n	n	n	+
	Medium term	+	+	n	n	n	n	+
	Long term	+	+	n	n	n	n	+

LFRMS Action	Duration	SEA Objectives						
		Minimise the probability and consequences of flooding	Minimise the probability and consequences of climate change	Maintain, and where possible, enhance the quality of water resources, water bodies and their environment	Maintain, and where possible, enhance biodiversity, geo-diversity and soils	Protect, and where possible, enhance the landscapes and green infrastructure	Protect, and where possible, enhance the health and well-being of the population	Protect existing and future economic and social infrastructure assets, services and amenities and encourage economic investment and growth
AoR628 - Roa Island	Short term	+	+	n	n	n	n	+
	Medium term	+	+	n	n	n	n	+
	Long term	+	+	n	n	n	n	+
AoR3701 - Silloth Groyne Replacement	Short term	+	+	n	n	n	n	+
	Medium term	+	+	n	n	n	n	+
	Long term	+	+	n	n	n	n	+
AoR3702 - Solway Firth Erosion Study	Short term	+	+	n	n	n	n	+
	Medium term	+	+	n	n	n	n	+
	Long term	+	+	n	n	n	n	+
AoR3703 - Harrington North Shore Coastal Erosion Protection	Short term	+	+	n	n	n	n	+
	Medium term	+	+	n	n	n	n	+
	Long term	+	+	n	n	n	n	+

LFRMS Action	Duration	SEA Objectives						
		Minimise the probability and consequences of flooding	Minimise the probability and consequences of climate change	Maintain, and where possible, enhance the quality of water resources, water bodies and their environment	Maintain, and where possible, enhance biodiversity, geo-diversity and soils	Protect, and where possible, enhance the landscapes and green infrastructure	Protect, and where possible, enhance the health and well-being of the population	Protect existing and future economic and social infrastructure assets, services and amenities and encourage economic investment and growth
AoR3704 - Workington Former Steel Works Site Coastal Erosion Scheme	Short term	+	+	n	n	n	n	+
	Medium term	+	+	n	n	n	n	+
	Long term	+	+	n	n	n	n	+
AoR3705 - Oldside Landfill Workington	Short term	+	+	n	n	n	n	+
	Medium term	+	+	n	n	n	n	+
	Long term	+	+	n	n	n	n	+
AoR3706 - Dubmill Point Coastal Erosion	Short term	+	+	n	n	n	n	+
	Medium term	+	+	n	n	n	n	+
	Long term	+	+	n	n	n	n	+
AoR3707 - Allonby to Seacroft Farm Erosion Protection	Short term	+	+	n	n	n	n	+
	Medium term	+	+	n	n	n	n	+
	Long term	+	+	n	n	n	n	+

LFRMS Action	Duration	SEA Objectives						
		Minimise the probability and consequences of flooding	Minimise the probability and consequences of climate change	Maintain, and where possible, enhance the quality of water resources, water bodies and their environment	Maintain, and where possible, enhance biodiversity, geo-diversity and soils	Protect, and where possible, enhance the landscapes and green infrastructure	Protect, and where possible, enhance the health and well-being of the population	Protect existing and future economic and social infrastructure assets, services and amenities and encourage economic investment and growth
AoR3708 - Siddick to Risehow (Flimby)	Short term	+	+	n	n	n	n	+
	Medium term	+	+	n	n	n	n	+
	Long term	+	+	n	n	n	n	+
AoR3709 - Siddick to Risehow (Siddick)	Short term	+	+	n	n	n	n	+
	Medium term	+	+	n	n	n	n	+
	Long term	+	+	n	n	n	n	+
AoR3710 - Siddick to Risehow (Siddick)	Short term	+	+	n	n	n	n	+
	Medium term	+	+	n	n	n	n	+
	Long term	+	+	n	n	n	n	+
AoR3711 - Bowness on Solway Erosion Reduction	Short term	+	+	n	n	n	n	+
	Medium term	+	+	n	n	n	n	+
	Long term	+	+	n	n	n	n	+

LFRMS Action	Duration	SEA Objectives						
		Minimise the probability and consequences of flooding	Minimise the probability and consequences of climate change	Maintain, and where possible, enhance the quality of water resources, water bodies and their environment	Maintain, and where possible, enhance biodiversity, geo-diversity and soils	Protect, and where possible, enhance the landscapes and green infrastructure	Protect, and where possible, enhance the health and well-being of the population	Protect existing and future economic and social infrastructure assets, services and amenities and encourage economic investment and growth
AoR3712 - Anthorn to Cardurnock Coastal Erosion	Short term	+	+	n	n	n	n	+
	Medium term	+	+	n	n	n	n	+
	Long term	+	+	n	n	n	n	+
AoR4701 - Millom & Haverigg Flood Alleviation	Short term	+	+	n	n	n	n	+
	Medium term	+	+	n	n	n	n	+
	Long term	+	+	n	n	n	n	+
AoR4702 - Seascale Coastal Erosion Protection	Short term	+	+	n	n	n	n	+
	Medium term	+	+	n	n	n	n	+
	Long term	+	+	n	n	n	n	+
AoR4703 - St Bees Coastal Erosion Protection	Short term	+	+	n	n	n	n	+
	Medium term	+	+	n	n	n	n	+
	Long term	+	+	n	n	n	n	+

LFRMS Action	Duration	SEA Objectives						
		Minimise the probability and consequences of flooding	Minimise the probability and consequences of climate change	Maintain, and where possible, enhance the quality of water resources, water bodies and their environment	Maintain, and where possible, enhance biodiversity, geo-diversity and soils	Protect, and where possible, enhance the landscapes and green infrastructure	Protect, and where possible, enhance the health and well-being of the population	Protect existing and future economic and social infrastructure assets, services and amenities and encourage economic investment and growth
AoR4704 - Whitehaven Harbour Flood Defence Capital Replacement Works	Short term	+	+	n	n	n	n	+
	Medium term	+	+	n	n	n	n	+
	Long term	+	+	n	n	n	n	+
AoR4705 - Parton Combined Flood and Coastal Erosion Risk Study	Short term	+	+	n	n	n	n	+
	Medium term	+	+	n	n	n	n	+
	Long term	+	+	n	n	n	n	+
AoR4706 - Stubb Place and Eskmeals Coastal Erosion Protection	Short term	+	+	n	n	n	n	+
	Medium term	+	+	n	n	n	n	+
	Long term	+	+	n	n	n	n	+

LFRMS Action	Duration	SEA Objectives						
		Minimise the probability and consequences of flooding	Minimise the probability and consequences of climate change	Maintain, and where possible, enhance the quality of water resources, water bodies and their environment	Maintain, and where possible, enhance biodiversity, geo-diversity and soils	Protect, and where possible, enhance the landscapes and green infrastructure	Protect, and where possible, enhance the health and well-being of the population	Protect existing and future economic and social infrastructure assets, services and amenities and encourage economic investment and growth
AoR4707 - Whitehaven Rock Armour Capital Maintenance	Short term	+	+	n	n	n	n	+
	Medium term	+	+	n	n	n	n	+
	Long term	+	+	n	n	n	n	+
AoR5701 - A5087 Newbiggin Protection	Short term	+	+	n	n	n	n	+
	Medium term	+	+	n	n	n	n	+
	Long term	+	+	n	n	n	n	+
AoR5702 - Morecambe Bay Erosion Study	Short term	+	+	n	n	n	n	+
	Medium term	+	+	n	n	n	n	+
	Long term	+	+	n	n	n	n	+

LFRMS Action	Duration	SEA Objectives						
		Minimise the probability and consequences of flooding	Minimise the probability and consequences of climate change	Maintain, and where possible, enhance the quality of water resources, water bodies and their environment	Maintain, and where possible, enhance biodiversity, geo-diversity and soils	Protect, and where possible, enhance the landscapes and green infrastructure	Protect, and where possible, enhance the health and well-being of the population	Protect existing and future economic and social infrastructure assets, services and amenities and encourage economic investment and growth
AoR5703 - South Ulverston Integrated Flood Risk Management Scheme	Short term	+	+	n	n	n	n	+
	Medium term	+	+	n	n	n	n	+
	Long term	+	+	n	n	n	n	+
AoR6701 - South Walney Landfill Site Protection	Short term	+	+	n	n	n	n	+
	Medium term	+	+	n	n	n	n	+
	Long term	+	+	n	n	n	n	+
AoR6702 - Roa Island	Short term	+	+	n	n	n	n	+
	Medium term	+	+	n	n	n	n	+
	Long term	+	+	n	n	n	n	+
AoR6703 - West Shore Park, Walney	Short term	+	+	n	n	n	n	+
	Medium term	+	+	n	n	n	n	+
	Long term	+	+	n	n	n	n	+

Conclusions and Monitoring

Conclusions

Each of the five overarching Policy Objectives set by the Cumbria LFRMS successfully supports the themes within the SEA objectives, achieving a positive outcome for each. The assessment shows that the strategy is unlikely to have any adverse effects on the environment and will instead work well to significantly reduce the risk of flooding to people and the county.

The LFRMS is predicted to have positive impacts on the environment in the short term and in the long term beyond the life of the strategy, for example LFRMS Policy Objective 1, minimise the probability and consequences of flooding. This objective will help reduce flooding immediately in areas that are at highest risk, whilst also providing longer term impacts since infrastructure is designed to last many years and will remain in place after the life of the strategy.

It is clear from the assessment of the actions and alternatives that the LFRMS will have a positive effect on the environment. By allowing the environment to evolve without the strategy, thus following the 'do nothing' alternative to the actions put forward, it is clear that there would be negative impacts on some of the SEA objectives, in particular objectives 1, 2 and 7. The reason for the negative assessment is that flood risk will increase over time and this option does not play an active part in reducing the risk.

The 'do nothing' approach for the county-wide action has been assessed and if taken forward would result in largely negative potential outcomes for the SEA objectives. Doing nothing to improve understanding or the management of flood risk does not strive to minimise the risk of flooding, leaving many people, businesses and infrastructure at risk and without the support they may require. Over time, the impacts of doing nothing are likely to worsen due to the

impacts of climate change and the inability to ensure that measures to reduce flood risk or adapt to the risk are incorporated into new and existing developments.

The local level actions set out in the strategy will together have a strong positive impact on the minimisation of flood risks and help to reduce the impacts of flooding. Implementing property level protection (PLP) schemes and supporting local flood groups will help people in at risk communities to become better prepared for flooding and help them become more resistant and resilient to flooding. By encouraging the use of SuDS schemes, flood risk from surface water sources can be reduced, along with the creation of new habitats in predominantly urban areas and water quality improvements.

Avoidance and Mitigation Measures

The assessment of the LFRMS objectives and actions to manage flood risk across the county has found that no negative impacts are likely to result from the implementation of the strategy; therefore no recommendations for mitigation measures will be made at this level. Measures for mitigation should be made at individual site level as part of any Environment Impact Assessments (EIA) required, to ensure that any potential for negative impacts to arise are avoided.

Monitoring

Although it is unlikely that the Cumbria LFRMS will have any adverse effects on the environment, it is a requirement of the SEA Directive for all impacts to be monitored. Monitoring of the LFRMS will enable the identification of any unforeseen adverse effects and allow Cumbria County Council to undertake any appropriate remedial works required, as well as recording the success of any enhancement schemes implemented.

The Cumbria LFRMS has been developed to manage flood risk over the next 5 years; therefore, a review of the Strategy will provide a good opportunity to also review any changes to the baseline data. Should a review of the strategy be required sooner, the environmental baseline shall also be reviewed in order to keep it up to date.

Section 7.2 of the LFRMS states that the Action Plan in Annex D will be updated annually with progress on previous actions noted and new actions that have been identified added. Such revisions will require a review of the assessment of the LFRMS actions as carried out in Section 8.3 of this SEA.

Figure 11 shows the draft SEA monitoring framework and the potential monitoring indicators for each SEA objective. Data required for the monitoring of the LFRMS implementation can come from a number of sources with much of the data obtainable including Cumbria County Council, the Environment Agency, Natural England and English Heritage. The indicators listed are suggestions for monitoring the Strategy implementation; however limited resources and data availability may cause problems with collection of data.

Figure 11: SEA Monitoring Framework

SEA Objective	Potential Monitoring Indicators	Responsible
Minimise the probability and consequences of flooding	<ol style="list-style-type: none"> 1. Number of properties (residential, commercial, industrial, etc.) at significant risk of flooding. 2. Number of properties granted planning permission in flood risk areas. 3. Number of potentially polluting features (e.g. Sewage treatment works, landfill sites, contaminated land at significant risk of flooding. 4. Number of flood risk management measures implemented. 5. Number of Sustainable Drainage Systems developed. 	CCC
Minimise the probability and consequences of climate change	<ol style="list-style-type: none"> 1. Number of properties (residential, commercial, industrial, etc.) at significant risk of flooding. 2. Number of properties granted planning permission in flood risk areas. 3. Number of potentially polluting features (e.g. Sewage treatment works, landfill sites, contaminated land at significant risk of flooding. 4. Number of flood risk management measures implemented. 5. Number of Sustainable Drainage Systems developed. 	CCC
Maintain, and where possible, enhance the quality of water resources, water bodies and their environment	<ol style="list-style-type: none"> 1. WFD ecological status of rivers. 2. WFD chemical status of rivers. 	Environment Agency
Maintain, and where possible, enhance biodiversity, geo-diversity and soils	<ol style="list-style-type: none"> 1. Area and condition of BAP habitat within the flood risk zone. 2. Population of key protected species. 3. Percentage of weirs which incorporate fish passes. 4. Non-native crayfish and other invasive species such as Japanese knotweed. 5. Number of flood risk schemes impacting on SSSIs. 	Natural England Environment Agency
Protect, and where possible, enhance the landscapes and green infrastructure	<ol style="list-style-type: none"> 1. Extent of areas of special landscape character (e.g. Special Landscape Areas). 2. Extent of areas of Green Infrastructure. 	Natural England CCC
Protect, and where possible, enhance the health and well-being of the population	<ol style="list-style-type: none"> 1. Number of sewer flooding incidents. 2. Number of flood related injuries. 3. Number of residential properties at significant risk of flooding. 	CCC
Protect existing and future economic and social infrastructure assets, services and amenities and encourage economic investment and growth	<ol style="list-style-type: none"> 1. Number and severity of flood incidents leading to disruption or damage to service provision. 	CCC





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